

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:)
) Atty. Docket No.: **IKEDA0034**
Keiichi SUGIMOTO)
)
Serial No. (Not Yet Assigned)) Group Art Unit:
)
Filed: Herewith)
) Examiner:
For: IMAGE BINARIZATION METHOD)
AND BINARY IMAGE CREATION)
METHOD) Date: September 28, 2001

PRELIMINARY AMENDMENT (A)

BOX: PATENT APPLICATION

Assistant Commissioner for Patents
Washington, D. C. 20231

Sir:

Prior to calculating the filing fee, kindly amend the above-captioned application as follows:

IN THE SPECIFICATION:

At page 19, replace the Abstract with the following:

An image binarization method having highest fidelity for multi-digitized luminance data, and a binary image creation method by which images can be obtained in real-time without post-processing. Thresholds in binarization are not fixed, but set in accordance with changes in luminance, thus allowing real time images to be obtained.

IN THE CLAIMS:

Kindly replace claims 5-8 with the following amended claims:

5. (Amended) An image binarization method according to Claim 1, wherein the floating threshold FT is determined by setting the emphasis coefficient $K=0.5$.
6. (Amended) An image binarization method according to Claim 1, wherein the floating threshold FT is determined by setting the emphasis coefficient $K>0.5$, and white characters are effectively reflected on a black background.
7. (Amended) An image binarization method according to Claim 1, wherein the floating threshold FT is determined by setting the emphasis coefficient $K<0.5$, and black characters are effectively reflected on a white background.
8. (Amended) An image binarization method according to Claim 1, wherein the fineness of the entirety of an image is effectively reflected by lowering the displacement level.

Kindly add the following new claims 11-14:

11. (New) An image binarization method according to Claim 2, wherein the floating threshold FT is determined by setting the emphasis coefficient $K=0.5$.
12. (New) An image binarization method according to Claim 2, wherein the floating threshold FT is determined by setting the emphasis coefficient $K>0.5$, and white characters are effectively reflected on a black background.
13. (New) An image binarization method according to Claim 2, wherein the floating threshold FT is determined by setting the emphasis coefficient $K<0.5$, and black characters are

effectively reflected on a white background.

14. (New) An image binarization method according to Claim 2, wherein the fineness of the entirety of an image is effectively reflected by lowering the displacement level.

14. (New) An image binarization method according to Claim 2, wherein the fineness of the entirety of an image is effectively reflected by lowering the displacement level.

REMARKS

With the above amendments, the Abstract has been amended in compliance with 37 C.F.R. § 1.72.

Additionally, claims 5-8 have been amended to make those claims singly dependent on claim 1. New claims 11-14 correspond to claims 5-8 but are singly dependent on claim 2.

A marked-up version showing the changes made to the Abstract and claims is attached for the convenience of the Examiner. No new matter has been added by these amendments.

Questions are welcomed by the below-signed attorney for applicant.

Respectfully submitted,

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

SPECIFICATION

Abstract:

ABSTRACT OF THE DISCLOSURE

The present invention provides aAn image binarization method in a form with thehaving highest fidelity for multi-digitized luminance data, and a binary image creation method by which images can be obtained in real-time without post-processing. Thresholds in binarization are not fixed, but set in accordance with changes in luminance, thus allowing real time images to be obtained. As a first processing, multi-digitized luminance data obtained by digitally converting video signals from an imaging device for each pixel on each horizontal scanning line is stored in a specific one of at least two horizontal line memories, and in the multi-digitized luminance data on the current scanning line, detected maximum value MAX_i and minimum value MIN_i , exceeding a predetermined displacement level and the addresses of the detected pixel positions are stored in a specific one of at least two detection memories, and as a second processing, reading-out is carried out from the detection memory specified by the previous horizontal scanning line, and based on floating thresholds $FT = MIN_i + |MAX_i - MIN_i| \times K$ (herein, K is an emphasis coefficient between 0 and 1, and i is an integer starting with 1) for each section of the horizontal pixel address row set by means of operation, multi-digitized data that has been read-out from the horizontal line memory specified by the previous horizontal scanning line is converted into binary data.

CLAIMS

5. (Amended) An image binarization method according to Claim 1 or 2, wherein the floating threshold FT is determined by setting the emphasis coefficient $K=0.5$.
6. (Amended) An image binarization method according to Claim 1 or 2, wherein the floating

threshold FT is determined by setting the emphasis coefficient $K > 0.5$, and white characters are effectively reflected on a black background.

7. (Amended) An image binarization method according to Claim 1 or 2, wherein the floating threshold FT is determined by setting the emphasis coefficient $K < 0.5$, and black characters are effectively reflected on a white background.

8. (Amended) An image binarization method according to Claim 1 or 2, wherein the fineness of the entirety of an image is effectively reflected by lowering the displacement level.

Claims 11-14 have been added.